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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/670,479	09/25/2003	Kent D. Vincent	10005743-3	8011

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EXAMINER	
EISEN, ALEXANDER	
ART UNIT	**PAPER NUMBER**
2674	

DATE MAILED: 10/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/670,479	VINCENT ET AL.	
	Examiner	Art Unit	
	Alexander Eisen	2674	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-12* is/are rejected.

7)☒ Claim(s) *13-18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 6 is objected to because of the following informalities:

in claim 6, line 2 "electronic field" apparently should read --electric field—since no electrons are involved.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-6 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Comiskey et al., (hereinafter "Comiskey"), US 6,473,072 B1.

With respect to claims 1 and 7 Comiskey discloses an electronic stylus apparatus and method comprising a portable power source (FIG. 1a; column 9, lines 28-38; FIG. 4b; column 10, lines 60-62) and connected to the power source at least one electrode (26 in FIG. 2; see also column 10, lines 20-24) producing a localized emanating electric field, wherein the field is of strength sufficient to reorient electronic picture elements formed of electrically bistable bichromal colorant elements (column 6, lines 8-35). The method disclosed by Comiskey in conjunction with the stylus apparatus comprises moving a portable perpendicular electric field (electric field created between the movable electrode 20 and the rear electrode 14 will be

perpendicular to the writing surface due to such disposition of the electrodes) across the surface, causing a change in orientation of the colorant elements, wherein dependant on the polarity of the voltage and therefore the direction of the electric field the relative orientation of the particles of two colors will change, and moving of the electric field is conducted in a manner substantially identical to conventional writing (see writing instrument or stylus in FIGS. 2 - 6; column 10, lines 20-54). The applicant defines "molecular colorant" as a single term meaning that this particular type of the colorant employs the colorant molecules and their equivalents as described in the Appendix to the Specification, and as such it is distinct from the prior art colorants acting on molecular level (page 6, line 21 - page 7, line 4). However, the language of claims 6 and 11 does not invoke sixth paragraph of 35 U.S.C. § 112, and therefore the examiner gives the term "molecular" the broadest possible interpretation, which resulted in current rejection of the claims.

In regards to claim 2, Comiskey further teaches an electronic circuit for switching polarity of the electric field (column 11, lines 7-19), wherein such switching is used for writing/erasing operation.

As to claim 3, Comiskey teaches the varying of the intensity of the electric field by varying the voltage potential applied across the writing surface so that the erasing and writing width (marking - erasing pixel width) can be adjustable (column 10, lines 55-59).

With regards to claims 1 and 4, Comiskey also teaches that the bistable bichromal colorant comprises at least two phases: an electrophoretic contrast media phase (17) and a coating/binding phase (19), wherein the coating/binding phase is made of various type of polymers (column 7, lines 20-30), which are inherently composed of molecules (and so is

surrounded by the coating/binding phase an electrophoretic suspension itself). This fact is also implicit from the process of making a polymeric binder described by Comiskey, whereas the final properties of the binder are dependent on molecular weight of the polymer (see column 8, lines 8-12, for example).

As to claim 5, Comiskey further teaches a hand-held pencil-shaped body (stylus 30'), wherein the power source 32' and electrode 36' (FIG. 4b; column 10, lines 60-65) are incorporated and the body is used for drawing or as a writing implement in a manner substantially identical to that of the conventional writing instrument.

It should be also noted that some other bichromal colorants are molecular-based colorants, such as disclosed in the prior art which is made of record but not relied upon in the *Conclusion* section of present Office action, for example an electrochromic type, wherein optical properties change in response to injection (reduction) of electron charge or the withdrawal of electron charge (oxidation), and liquid crystal type, wherein in response to change of electric field the orientation of molecules and the optical properties of the latter also change causing the change of apparent colors (transmitted or reflected) for the viewers.

As to claim 6, Comiskey teaches the power source that has a capacitor 34 (FIG. 4A), which helps to maintain a substantially constant electric field output of the apparatus.

As to claim 12, Comiskey discloses an electronically writable-erasable surface (casing 12) having a layer of bistable (column 9, lines 7-14) bichromal colorant disposed thereon (column 11, lines 20-24; also capsules 13 including particles of two colors - white and black; column 6, lines 17-35), and a portable electronic stylus (20) adapted for writing and erasing the colorant. As to limitation "molecular" see the discussion above.

4. Claims 7-9 and 11 are rejected under 35 U.S.C. 102(b) as being anticipated by Hashimoto, JP 63-201815.

With respect to claim 7 Hahimoto discloses a method comprising providing a surface 16 having picture elements defined by a bistable molecular colorant elements, such as liquid crystal molecules 30 (see FIGS. 1-6 and the abstract English translation); and moving a portable electrical fringe field (provided with a tip of a pen 23) emanating substantially perpendicular to the surface and tuned for changing orientation of the molecules of the colorant across the surface in a manner substantially similar to conventional handwriting.

As to claim 8, the writing-erasing instrument is provided, such as a pen 23, producing perpendicular electric field, wherein the field is localized to be emanating from the tip of said instrument since the voltage is applied to said tip.

As to claim 9, FIGS. 5-6 and the abstract show that applying electric fields of different polarities aligns molecules in different ways, which means that after writing on the surface by applying one polarity, the application of the opposite polarity would re-align the molecules back (and therefore "erase" the writing).

As to clam 11, the liquid crystal molecules are bistable and bichromal since their reflective properties are changed by electric field (from the light state to the dark state, see abstract).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hashimoto in view of Hashimoto_2, JP 63-192123.

Hashimoto does not disclose that strength of the perpendicular fringe field tunable such that the marking pixel width and erasing pixel width of the tip is adjustable.

Hashimoto_2 teaches the writing system similar to that of the Hashimoto and wherein the strength of the field is tunable (by moving tip electrode; see FIGS. 1-5 and abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use tunable field of Hashimoto_2 in the writing system of Hashimoto, motivated by the former, because it would provide the line thickness changed in natural way of writing.

Allowable Subject Matter

7. Claims 13-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: none of the references, either individually or in combination, teach or fairly suggest an erasable writing system comprising an electronically writable-erasable surface having a layer of bistable bichromal colorant thereon and a portable stylus adapted for writing and erasing the colorant, wherein the colorant is comprising a molecular system including electrochromic switchable molecules, each molecule being selectively switchable between two optically distinguishable states, wherein the system is distributable on the substrate and therefore forming an erasable writable surface.

Engler et al., US 4,142,783, and Morrison et al., US 2002/0154382 A1, teach displays based on properties of electrochromic molecules, but they neither provide a motivation for using such material in erasable writing systems utilizing a portable stylus, nor do they teach or suggest an erasable writing system with portable stylus for writing and erasing a colorant comprising a molecular system including electrochromic switchable molecules, with the molecules being selectively switchable between at least two optical states therein.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

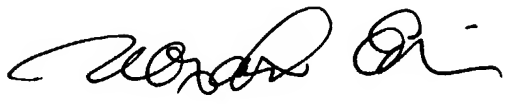
Gimzewski et al., US 6,031,756, teaches bistable switching of molecules attached to a substrate for creating a pattern, recording and reading information using a stylus.

Muragata et al., JP-08-292408, discloses a portable power source implemented in a handwriting tool (FIGS. 4-5) for producing an electrical field used for re-orientation of liquid crystal molecules in the polymer dispersed liquid crystal display used as a writing surface (FIG. 8).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander Eisen whose telephone number is (703) 306-2988. The examiner can normally be reached on M-F (8:30-4:00).

The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Alexander Eisen
Primary Examiner
Art Unit 2674

28-Oct-04